



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/089,092

08/07/2002

Stefan Cramer

204-032

4461

7590

02/09/2006

Felix J D' Amrosio
Jones Tullar & Cooper
P O Box 2266 Eads Station
Arlington, VA 22202

EXAMINER

NATALINI, JEFF WILLIAM

ART UNIT

PAPER NUMBER

2858

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

60

Office Action Summary	Application No. 10/089,092	Applicant(s) CRAMER ET AL.	
	Examiner Jeff Natalini	Art Unit 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-27 is/are allowed.
- 6) ☒ Claim(s) 28-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over McEwan (5609059) in view of Okubo et al. (5973636).

In regard to claims 28 and 29 McEwan discloses an apparatus comprising: a trigger generator for generating a transmission pulse at a variable pulse repetition frequency (fig 4 (46) with a control signal (from fig 4 (53)) and a scanning trigger signal (fig 4 (78,77)) with a frequency or phase different from said transmission trigger signal (ramp generator 77 would make the scanning trigger signal different from the pulse generated by pulse generator-46);

scanning generator for generating (fig 4 (53,55)) transmitting and scanning pulses from the transmitting trigger signal (fig 4 (78,77)).

scanning unit (fig 4 (45,68,70,72,79)) that continuously obtains measured values, from said reflection profiles (col 9 line 45-48), that contain the distance of the reflector to a process terminal (col 3 line 33-38), with means to scan the reflected signal (The plate (18) continuously picks up the signal reflected from the surface level (23; col 7 line 62-65), so the plate is scanning the reflected signal) for time-expanded display as a

Art Unit: 2858

reflection profile with scanning pulses repeated at a scanning frequency (col 4 line 35-38, fig 4 (72-display));;

McEwan lacks a control unit for evaluating said reflection profile and generating said control signal to adjust the phase or frequency difference between the trigger signals, from which the pulse repetition frequency is varied, and where the trigger generator includes a voltage controlled oscillator that oscillates at said variable pulse repetition frequency

Okubo et al. discloses a control unit ((fig 23 (108))) that evaluates the profile of the signal and adjusts the frequency of the trigger signal, therefore adjusting the frequency different between the two trigger signals (col 13 line 14-19) where the pulse repetition frequency is varied (col 4 line 53-59); and varying said pulse repetition frequency using a voltage controlled oscillator (fig 23 (114), col 13 line 32-34, the VCO forms part of the frequency hopping means col 13 line 14-19).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for McEwan to use a control unit to evaluate the signal and adjust the frequency of the trigger signal accordingly and having a VCO as part of this process as taught by Okubo et al. in order to obtain a signal with less interference for increased accuracy (col 4 line 55-59).

In regard to claim 30, McEwan (as modified by Okubo et al. from claim 29 would now include a VCO controlling the trigger generator) discloses wherein said trigger generator (fig 4 (46)) includes a controllable delay circuit (fig 4 (48,51);col 4 line 25-30),

Art Unit: 2858

whose output signal represents said scanning trigger signal (fig 4 (77, 53); col 9 line 27-31).

In regard to claims 31 and 32, McEwan discloses wherein a regulator is supplied (fig 4 (50)), and another oscillator is included in the trigger generator forming an oscillator bank (fig 4 (78 and 40 now comprise the trigger generator)), wherein the scanning frequency upon a variation in the pulse repetition frequency is adapted such that the difference between the scanning frequency and the pulse repetition frequency does not exceed a predetermined range or is constant (col 9 line 53-65).

Allowable Subject Matter

2. Claims 17-27 are allowed.

In regard to claims 17 and 26, the prior art does not teach or render obvious continuously obtaining measured values from said reflection profiles that contain the distance of the reflector to a process terminal, using an algorithm for deciding the usability of said measured values, where the algorithm varies said scanning frequency and said pulse repetition frequency and determines the amount the amount of interference and from the measurement of said reflected profiles or a part thereof in the combination as claimed.

Claims 18-25 and 27 depend from allowable claims 17 and 26 and are therefore also allowable.

Response to Arguments

3. In response to the arguments filed 11/14/05, it was argued that Okubo et al. did not disclose wherein an algorithm is able to calculate the amount of interference, careful consideration was given to Okubo et al. as well as other prior art, and it was noted claims 17 and 26 are now allowable. The features argued that Okubo et al. does not teach are not included in the claim limitations in independent claim 28, and therefore claims 28-32 remain unpatentable over the combination of McEwan and Okubo et al.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McCarthy et al. (6559657) discloses a method/apparatus for processing a time domain reflectometry (TDR) signal having a plurality of reflection pulses, and having multiple pulse generators.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Natalini whose telephone number is 571-272-2266. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on 571-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2858

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeff Natalini



ANJAN DEB
PRIMARY EXAMINER